

Remarks

Claims 1-26 are pending in the application. Claims 1-26 are rejected under 35 U.S.C. § 102(b) in view of Matsuoka, Kaley and Weber. In view of the following remarks, reconsideration and withdrawal of these grounds of rejection is requested.

Specification

The Abstract was objected to as containing improper terms such as “comprising” and “said.”. A new Abstract is submitted with this Amendment which does not include such terms, and thus this objection is deemed overcome.

The disclosure was objected to as containing various informalities. Applicant has made various amendments to pages 2, 7, 8, 11, 13 and 16 of the specification in an effort to correct these informalities. Reconsideration and withdrawal of this objection is earnestly solicited.

Drawings

Figures 4 and 7 are objected to because insulating members are not shown in the proper crosshatch. Applicant submits herewith revised versions of Figures 4 and 7 which show the proper crosshatching. Thus, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Figure 4 is objected to under 37 CFR 1.84(h)(1) as being an ‘exploded’ view not shown in brackets. The Applicant notes that Figure 4 is not an ‘exploded’ view; Figure 4 is a detail view of the connection point between two headers 410, 430, such as headers 210-240 shown in Figure 2.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Figure 4 is additionally objected to under 37 CFR 1.83(a) as not showing a claimed element. Although not clear from the Office Action, the Examiner appears to object to Figure 4 for not showing the housings 410, 430 as being “moveably connected” as specified in original claim 1 (now claim 7). The Applicant strenuously disagrees with this characterization of Figure 4. Figure 4 clearly shows a ridge 428 on the retention arm 420 which engages a ridge 448 in the opening 442 when the retention arm is inserted therein and moved towards the ridge 448. As noted in the specification, the ridge 428 on the retention arm 420 may move past the ridge 448 until it engages a ‘stop’ point in the lower shaft 446 (see, page 8, lines 20-22). This ‘play’ between the ridge contact point (i.e., the point where the ridge 428 and the ridge 448 touch) and the stop point (i.e., the point where the ridge 428 and 448 are separated by some small distance) permits the housings 410, 430 to be “moveably connected” as presently specified in independent claim 7. Hence, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Claim Objections

Claims 4, 10 and 18 are objected to as containing various informalities. Claim 3 has been amended to replace the terms “rib” with “ridge,” and thus such terms in claim 4 now have antecedent basis. Claim 4 has also been amended to change the term “an-n” to “arm” as suggested by the Examiner. Claim 10 has been amended to make it clear that the “stop” prevents the retention arm from passing “completely” through the opening. Claim 18 has been amended to delete the number “1 5”. Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-3, 5-7 and 10-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsuoka (U.S. Pat. No. 5,443,404). In view of the following remarks, reconsideration and withdrawal of this ground of rejection is respectfully requested.

The present invention comprises, in one exemplary embodiment, a pin header assembly 200 including headers 210, 220, 230 and 240 which are coupled together by male and female members disposed on the headers (See Fig. 2).

Figure 4 shows an exemplary assembly for coupling a first header 410 to a second header 430. In particular, the first header 410 includes a retention arm 420 which protrudes from the header and which includes a ridge 428. The second header 430 includes an opening 442 into which the retention arm 420 may be inserted. The opening 442 includes a ridge 448 corresponding to the ridge 428 on the retention arm 420 of the first header 410.

Claim 7 now recites:

A connector assembly comprising: a first housing having a retention arm; and a second housing having an opening for receiving the retention arm, wherein the retention arm is mounted in the opening and the first housing and the second housing are moveably connected, wherein the first housing and the second housing each have a lower side for connecting to a printed circuit board (PCB), and wherein at least one of the lower sides includes guide pins for aligning the first housing and the second housing with the PCB. [emphasis added].

Thus, claim 7 presently requires an assembly including “first” and “second” moveably connected housings wherein a lower side of one of the housings includes “guide pins” for aligning

the housing with a printed circuit board. As discussed below, Matsuoka fails to disclose or suggest such an invention.

Matsuoka teaches a plurality of sockets 2 arranged on a wiring board 7, and coupled together by the interaction of an engagement piece 11 (on a first socket 2) with a clearance 9 (on a second socket 2) (See Figs. 4 and 5). A lower surface of the sockets 2 include male terminals 4a for insertion into through-holes 13 in the wiring board 7. When the male terminals 4a are so inserted (and subsequently soldered), an electrical connection is formed between the wiring board 7 and the respective socket 2.

Matsuoka fails to disclose, teach or suggest an assembly including “first” and “second” moveably connected housings wherein a lower side of one of the housings includes “guide pins” for aligning the housing with a printed circuit board, as recited in claim 7. Accordingly, reconsideration and withdrawal of this rejection with respect to claim 2, 6, 7, 10 and 11 is respectfully requested.

Similar to independent claim 7, independent claims 12, 15 and 18 now includes limitations requiring assembly including “first” and “second” moveably connected housings wherein a lower side of one of the housings includes “guide pins” for aligning the housing with a printed circuit board. Hence, for at least those reasons discussed above with respect to claim 7, reconsideration and withdrawal of this ground of rejection with respect to claims 10-26 is also respectfully requested.

Claims 1-6 and 18-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kaley (U.S. Pat. No. 4,580,861). In view of the following remarks, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Kaley teaches a modular connector 10 including a male 14 and a female 15 link (See Fig. 1).

The male link 14 includes a head 27 with a central ridge 31 and side surfaces 30. The female link 15 includes stop shoulders 20-23 which engage the side surfaces 30 of the head 27 when the male link 14 is inserted in the female link.

Kaley fails to disclose, teach or suggest an assembly including “first” and “second” moveably connected housings wherein a lower side of one of the housings includes “guide pins” for aligning the housing with a printed circuit board, as recited in independent claim 7. Kaley also fails to disclose or suggest a method for manufacturing an assembly including the steps of fabricating a “plurality of headers”, and connecting a “first” header to a “second” header, where the lower sides of the plurality of headers include “guide pins” for aligning the plurality of headers with a printed circuit board, as recited in independent claim 18. Accordingly, reconsideration and withdrawal of this ground of rejection with respect to claims 1-6 and 18-26 is respectfully requested.

Claims 1, 3, 5-9, 11-13 and 15-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Weber et al. (U.S. Pat. No. 4,790,763). In view of the following remarks, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Weber teaches a connector assembly 10, 10' for coupling a mother circuit board M to a daughter circuit board DA (See Fig. 1A). The mother board assembly 10 includes, for example, modules E and F which may be coupled to each other by means of housing members 26, 28 disposed on the module F, and corresponding projection 46 on the module E. The module F also includes a (male) projection 22 which may be aligned with a (female) socket 42 to assist in mating the modules. Aligned posts 70 extend from the module F for providing an electrical connection to the mother board M.

Weber fails to disclose, teach or suggest an assembly including “first” and “second” moveably connected housings wherein a lower side of one of the housings includes “guide pins” for aligning the housing with a printed circuit board, as recited in independent claim 7. The only alignment members arguably taught by Weber are the projection 22 and socket 42 for aligning the modules E and F with one another (emphasis added). Weber nowhere teaches or suggests members for aligning the modules E and F with the mother board M.

Weber also fails to disclose or suggest an assembly including “first” and “second” moveably connected headers wherein a lower side of both the headers include “contact pins” for insertion into a printed circuit board, and “guide pins” for aligning the headers with the printed circuit board, as recited in independent claim 12.

Finally, Weber also fails to disclose or suggest an assembly including a printed circuit board and a header assembly, such that the header assembly includes “first” and “second” headers wherein a lower side of at least one of the headers includes “guide pins” for aligning the header with the printed circuit board, as recited in independent claim 15.

Therefore, for the reasons noted above, reconsideration and withdrawal of this ground of rejection with respect to claims 1, 3, 5-9, 11-13 and 15-17 is respectfully requested.

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Conclusion

In view of the foregoing remarks, Applicants submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

Respectfully submitted,



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